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ABSTRACT

This paper describes the Foresee Approach, a recently developed model for integrating content, language, and learning strategies instruction in the English-as-a-Second-Language (ESL) or part ESL classroom. The Foresee model is an extension of Chamot and O'Malley's Cognitive Academic Language Learning Approach (CALLA), resembling the latter in comprising both theoretical and practical components. The Foresee theoretical model guides the formulation of instructional objectives in the three categories above, while the Foresee application process provides a general formula for designing integrated lessons to accomplish these desired objectives. These two complementary aspects of the model are explained in as much detail as space permits, with emphasis on the general application process. To assist teachers in implementing their approach in their classrooms, the greater part of the paper is devoted to a description of five specific instructional techniques, called Foresee lesson techniques, that teachers can utilize with relative ease to plan the procedures sections of effective Foresee lessons. Although illustrative examples are drawn from elementary-level sources, the approach is applicable to other levels as well. (Author)

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The Foresee Approach to Content-Based ESL Instruction

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This paper describes the **Foresee Approach**, a recently developed model for integrating content, language, and learning strategies instruction in the ESL or part-ESL classroom. The Foresee model is really an extension of Chamot & O'Malley's Cognitive Academic Language Learning Approach (CALLA), resembling the latter in comprising both theoretical and practical components. The *Foresee theoretical model* guides the formulation of instructional objectives in the three categories above, while the *Foresee application process* provides a general formula for designing integrated lessons to accomplish these desired objectives. These two complementary aspects of the model are explained in as much detail as space permits, with emphasis on the general application process. Then, to assist teachers in implementing the approach in their classrooms, the greater part of the paper is devoted to a description of five specific instructional techniques, called *Foresee lesson techniques,* that teachers can utilize with relative ease to plan the procedures sections of effective Foresee lessons. Although illustrative examples are drawn from elementary-level sources, the approach is applicable to other levels as well.

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The Foresee Approach to Content-Based ESL Instruction

The practice of integrating **language** and **content** instruction (e.g., Crandall, 1987; Cantoni-Harvey, 1987; Brinton, Snow, & Wesche, 1989; Snow, Met, & Genesee, 1989; Spanos, 1990) has assumed an extra dimension through the work of Chamot and O'Malley (1986, 1987, 1989, 1994), who argue convincingly for the inclusion of **learning strategies** as a third important component of content-based ESL instruction. We strongly agree with Chamot and O'Malley (henceforth C&O) that integrated instruction should incorporate all three elements, and we have devised for this purpose an instructional model called the **Foresee Approach**. Our model is a modification, or more accurately an *extension*, of C&O's Cognitive Academic Language Learning Approach (CALLA), and we gratefully acknowledge our debt to their inspiration and insights. The major innovations of our Foresee model, as we shall explain, lie mainly on the level of practical application, where we introduce a number of original ideas for teaching language and learning strategies through content material.

The name "Foresee" derives from the homophone "**4C**," which stands for *Communication, Cognitive-Academic Language Development, and Content Instruction in the Classroom.* A detailed explanation of the Foresee Approach can be found in Kidd and Marquardson (1993, 1994), two sourcebooks written for the teachers of Manitoba. Our purpose in this paper is to introduce the basic features of our model, placing particular emphasis on the description of some practical techniques and activities which lend themselves to the teaching of learning strategies. We have chosen to focus on strategies because they are the least familiar component of integrated instruction. All of our teaching procedures have been used successfully with ESL students at the elementary level, both in ESL preparatory and pullout classes and in regular classrooms. Although our illustrative examples are drawn from our experiences at this level and are appropriate mainly for the teaching of younger children, the techniques and

activities we describe can be adapted and used with similar success at higher levels as well, as demonstrated in our *Secondary Sourcebook* (Kidd & Marquardson, 1994).

The Foresee model, like CALLA, comprises two distinct but related elements, *theory* and *application*, both of which have practical value. First, the **theoretical model** assists teachers in generating or establishing appropriate lesson objectives, especially the learning strategies and specific language features that can be taught through the content material they select. Second, the Foresee **application process** provides a general scheme for formulating effective lesson procedures. We shall examine both aspects of our approach, devoting a lengthy separate section to the description of five practical **techniques** that teachers can utilize with relative ease to plan the procedures sections of effective Foresee lessons.

ESTABLISHING OBJECTIVES: THE FORESEE THEORETICAL MODEL

The Foresee Approach incorporates the three-component model of CALLA (C&O, 1986, 1987, 1989), but introduces an original diagrammatic representation in the form of the triangular configuration shown in Fig. 1. The three large circles represent the content, language, and learning strategies components of integrated instruction. These major components are mutually supportive rather than separate and isolated, with the two-way arrows in the diagram indicating the various interactions between them. First, content provides the vehicle through which academic language proficiency can be developed and the learning strategies can be learned and practiced. The position of the content component at the apex of the triangle is therefore quite appropriate to Foresee, which (like CALLA) is basically a "content-driven" model (Chamot, O'Malley, & Küpper, 1992). Conversely, the content itself is mastered more easily if students have acquired the linguistic tools (vocabulary, structures, language skills, etc.) needed for academic work, and if they make use of effective learning strategies. Language and learning strategies are thus appropriately situated at the base of the

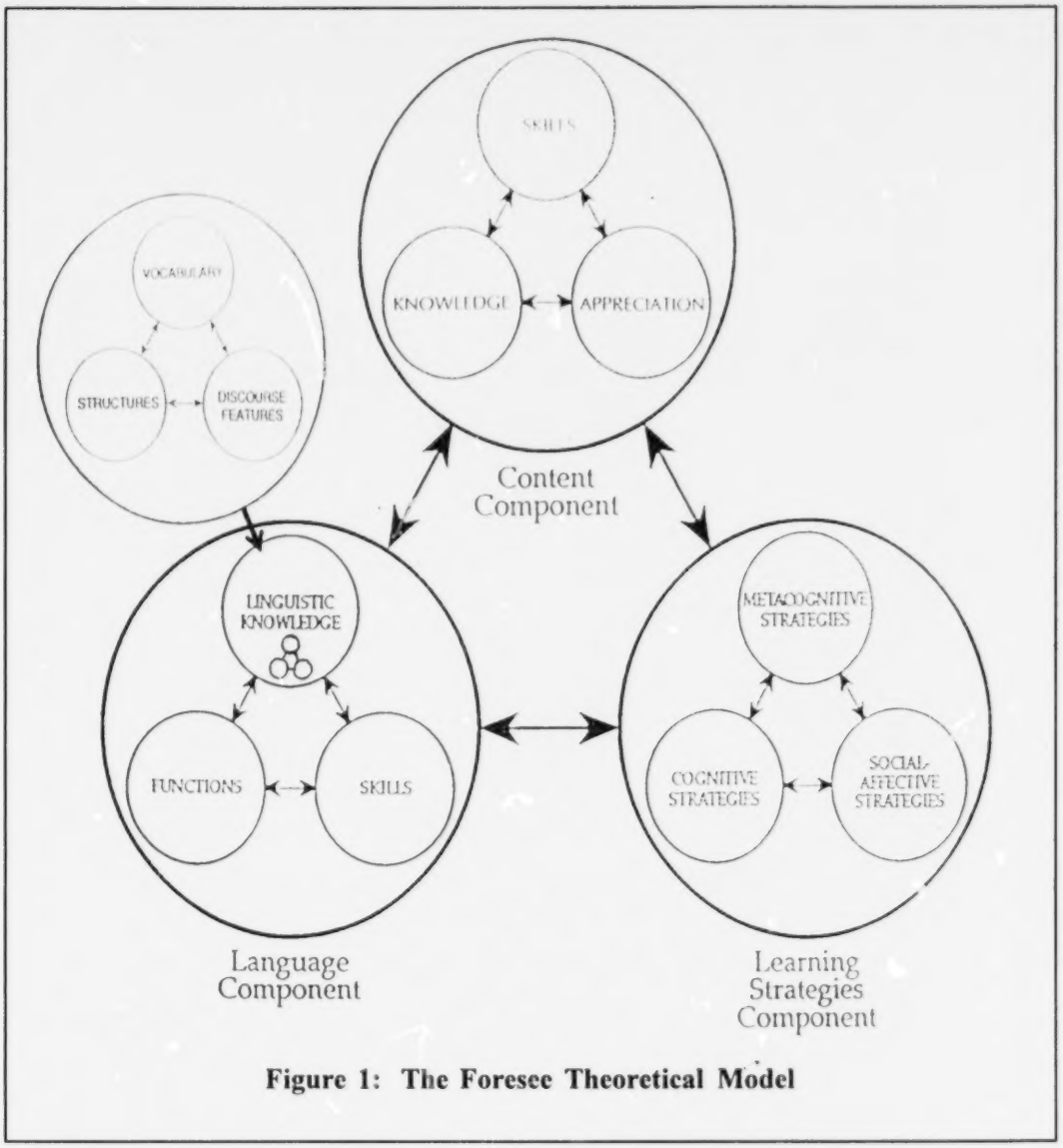


Figure 1: The Foresee Theoretical Model

triangle, inasmuch as they combine to provide a solid foundation for the learning of subject matter. Finally, the two base components are also interdependent. Good learning strategies can assist students to acquire a second language (Rubin, 1975; Naiman, Frolich, Stern, & Todesco, 1978; Oxford, 1990; O'Malley & Chamot, 1990). In the other direction, good language skills are often important to the successful application of the learning strategies themselves; for example, good listening skills are obviously essential to efficient note-taking, one of C&O's (1987) cognitive strategies.

As shown in Fig. 1, each major component contains a similarly configured set of three subcomponents. We shall describe the internal composition of these three components as briefly as possible, in order to conserve space for a thorough explanation of the practical application of our model.

(1) The Content Component. Success in content-area learning depends on the acquisition of two different kinds of knowledge, *declarative* and *procedural* (Anderson, 1985). Declarative knowledge, what students "know about" the subject matter, consists of both facts (individual bits of information) and processes (relations between objects and events). These are represented by the **knowledge** circle in Fig. 1. Anderson's second kind of knowledge, procedural, can appropriately be called **skills**: what students "know how to do" in the various content areas. These may be subject-specific skills (e.g., calculating, performing science experiments) or more generic academic skills (e.g., problem solving). Linguistic knowledge and skills are obviously part and parcel of many of these content-area skills, but language — for the sake of pedagogical clarity and simplicity — is better situated in a separate component. Thirdly, we believe that it is also important to promote students' sense of **appreciation** for the subject matter, so that they will enjoy learning it and look forward to studying it in the future.

(2) The Language Component. C&O (1987) include four important "aspects of language" within their "language development component." These are: (a) vocabulary, (b) academic language functions, (c) structures and discourse features (grouped together), and (d) language skills (listening, speaking, reading and writing for academic purposes). We prefer, however, to distinguish three separate subcategories here, rather than the four they suggest. In the Foresee model, vocabulary (lexical knowledge) is grouped with structures (syntactic and morphological) and discourse features in a subcomponent called **linguistic knowledge** — what ESL students need to learn about language *forms* of these three important types. The learning

of such forms is obviously necessary for success in content-area work, but it is certainly not a sufficient condition. Students must also acquire control over academic language **functions** (how to *use* language forms to perform academic tasks such as defining, classifying, expressing cause and effect, explaining, describing, and evaluating) and develop good academic language **skills** (listening, speaking, reading, and writing, the modalities through which the various functions are accomplished). The three language subcomponents are represented by the smaller triangle within the language component in Fig. 1, with the linguistic knowledge subcomponent containing its own triangle (inset) — vocabulary, structures, and discourse features.

As mentioned above, the practical value of both the content and language components lies in their potential for generating lesson objectives. The selection of content objectives will rarely pose a serious problem for experienced teachers, and our brief description of the content component will likely be of little practical value to them. On the other hand, we believe that many teachers of ESL students can benefit from an organized scheme for choosing appropriate language objectives, and one strength of our proposed language component is that it focuses attention on a variety of language features. All teachers recognize the need to teach vocabulary and language skills to ESL students, but relatively few possess a linguistically-grounded *explicit* understanding of structures, discourse features, and academic language functions. The Foresee version of the language component is designed to provide the linguistic guidance necessary for establishing objectives in these categories. This component therefore has great potential value, though we must admit that the brief treatment we have awarded it here lacks sufficient detail to be especially helpful. Unfortunately, an in-depth analysis of its various subcomponents is beyond the scope of this paper. A detailed discussion of the linguistic theory represented by the language component can be found in our two *Sourcebooks* (Kidd & Marquardson, 1993, 1994).

Because ESL students need a great deal of help in learning academic language, we recommend that teachers take maximum advantage of the language development possibilities of content-area work. As a way of ensuring that attention be paid to a broad range of language features, Foresee lesson plans normally include specific language objectives in *all* the subcategories discussed above. Furthermore, we recognize the need for *explicit instruction* in all aspects of academic language — grammatical structures, discourse features, functions, etc. Although formal language instruction is often ineffective when it is presented out of functional context, we have found that even young children can profit from it when it is integrated with content-area activities and taught through them. Not surprisingly, students are more inclined to learn language forms when they recognize these as crucial to success in comprehending the subject matter and expressing their own ideas about it. But while we attach great value to explicit language instruction, we also recognize the importance of *experiential learning*. This is the type emphasized by C&O, who credit the growth of academic language proficiency mainly to practice and experience. In their words, the purpose of the language development component of CALLA is to give students

> sufficient practice in using language in academic contexts so that language comprehension and production become automatic and students develop the ability to communicate about academic subjects (1987, p. 234).

(3) The Learning Strategies Component. C&O have often emphasized that the learning strategies component is a unique feature of CALLA. They describe strategies as "conscious techniques that facilitate learning both language and content" (1989, p. 116), arguing on the basis of extensive research evidence (O'Malley & Chamot, 1990) that students can dramatically improve their ability to understand and remember new information if they make a *deliberate effort* to learn and apply a variety of these learning strategies, ideally to the point of automaticity.

A large number of specific learning strategies have been identified in the literature. Oxford (1990), for example, names and describes no fewer than 62 distinct strategies that can be applied to the task of learning a second language. C&O (1987) propose a more modest list of around 18 strategies that are particularly useful for learning both language and content in academic contexts. They classify these various strategies into three categories, *metacognitive, cognitive,* and *social-affective*. As shown in Fig. 1, their scheme has been adopted — unchanged and intact — as the learning strategies component of the Foresee theoretical model.

a) **Metacognitive strategies** are strategies relating to the *planning, monitoring,* or *evaluating* of one's own learning. They come into play when students think about *how* to approach or attack a learning task, or when they consciously assess *how successfully* a learning task is proceeding or has proceeded.

b) **Cognitive strategies** are strategies which can be applied directly to the tasks of understanding and learning. These strategies may be mental (e.g., forming mental images to aid memorization) or physical (e.g., note-taking; using resource materials).

c) **Social-Affective strategies** are strategies through which the learner either enlists the support or assistance of other people (e.g., peers, teachers) or establishes an emotional or attitudinal state of mind conducive to success.

Classroom instruction focusing on these strategies should not be regarded as a frill, a mere supplement to the teaching of more important material (i.e., content and language). The mastery of learning strategies constitutes a major pathway to empowerment, a means through which students can develop into autonomous and independent learners. Like C&O, we strongly recommend that they be *explicitly taught* and *consciously practiced* through the vehicle of content-area work. For the reader's information, a complete list of C&O's (1987) learning strategies and their descriptions is included in Appendix A. This list is supplemented by additional notes and comments which explain how these learning strategies are used and taught during the course of Foresee instruction.

THE FORESEE APPLICATION PROCESS

The other half of the Foresee model is an *application process* designed to provide teachers with practical assistance in planning effective integrated lessons. In the past, one popular form of assistance has been the publication of classroom materials containing packaged units that teachers can implement directly. These units usually consist of a sequence of prepared lessons based around interesting content-area topics and language development activities. Materials of this type often take the form of series, or multi-level sequences, with each level usually having its own "student's book," "teacher's guide," etc. A good example is Chamot, O'Malley, and Küpper's (1992) series *Building bridges: Content and learning strategies for ESL*, which is published in three levels (Book 1 — high beginning; Book 2 — low intermediate; Book 3 — intermediate). This series provides secondary school teachers with complete CALLA units — sets of carefully structured lesson plans or activities — that can be implemented directly in the classroom. These units are built around interesting content topics, and are specially designed for teaching learning strategies. Similar CALLA-based materials have been produced to assist the teaching of specific subject areas like mathematics (C&O, 1988) and social studies (Chamot, 1987a, 1987b).

Materials of this type frequently contain a wealth of good teaching ideas, and can therefore be useful to classroom teachers even if the units they contain are not followed to the letter. In developing the practical side of the Foresee Approach, however, we have chosen a different option for assisting teachers through the implementation phase, since many teachers we have encountered dislike being bound by packaged materials. They prefer to create their *own* lessons and units, partly for personal satisfaction but mainly because they know that tailor-made instruction has the best chance of meeting the particular needs and interests of their

students. We recognize and respect this preference for individual creativity, and have adopted it as a central element of the Foresee application process.

There is, however, another side to the creativity issue. As much as they may prefer to develop their own lessons and units, most teachers do not profess to be materials developers. That is, they do not make a practice of producing original books, stories, poems, songs, content-area texts, pictures, or other materials that they can build their lessons around. Rather, their creativity lies in their expertise at selecting, manipulating, and sometimes adapting appropriate *published materials* (regular textbooks, ESL materials, or whatever) as the nuclei of effective instruction. Teaching has often been called an art; at the elementary level especially, no small facet of that art is skill at utilizing existing materials for one's own pedagogic purposes. The Foresee Approach explicitly recognizes this common practice as a further important aspect of the application process.

Turning to specifics, the application of the Foresee Approach can be viewed as a dynamic interaction or synthesis of three separate elements, as shown in Fig. 2. First, the **theory** component is simply the Foresee theoretical model, which — as we have seen — generates appropriate lesson objectives in a range of categories. As indicated in the figure, this component guides the teacher in deciding "what to teach." Let us examine the other two components of the application process.

While classroom **materials** may on occasion be teacher-produced, they most often tend to be published resources of various types — books, stories, pictures, etc. — which teachers use to build their lessons (and even units) around. The best materials are those that are visually appealing to students (colorful, well illustrated, attractively laid-out, etc.), interesting and motivating in content, and readily adaptable to the students' needs and interests. Some examples of excellent current materials are the Santillana *Bridge to Communication* series

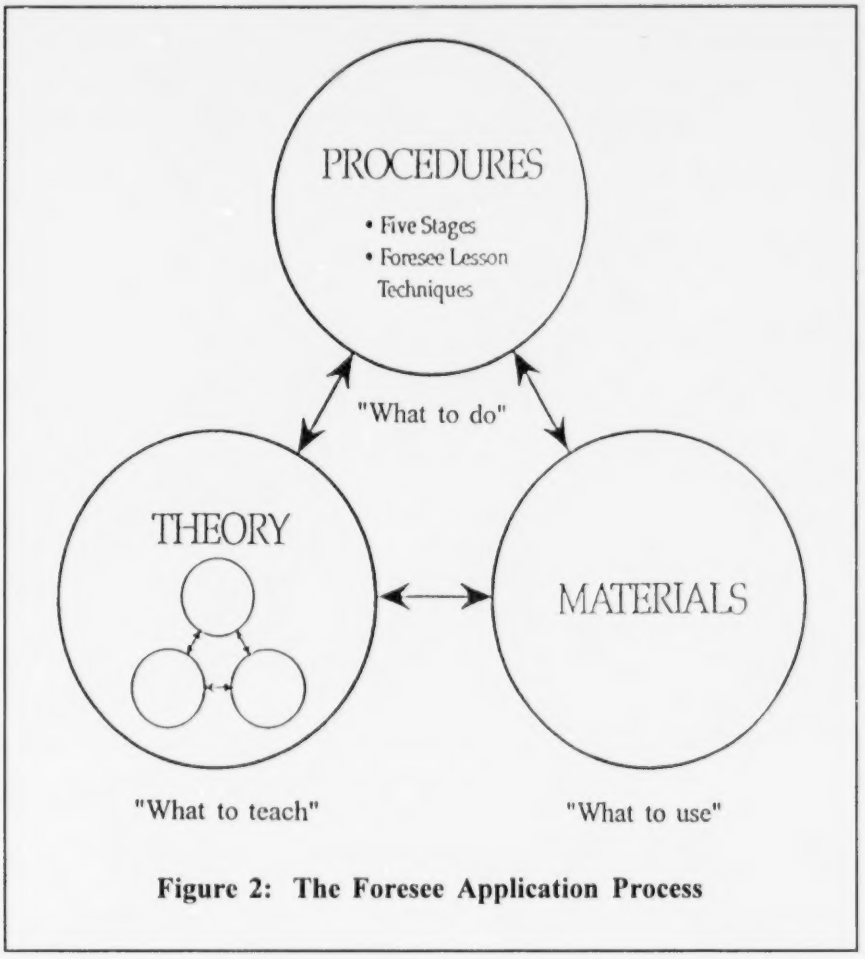


Figure 2: The Foresee Application Process

(1992), the Oxford *Open Sesame English as a Second Language Series* (1985), and the *Addison-Wesley ESL Series* (1992). We have drawn extensively from these sources in planning successful instructional units at the elementary level, and we recommend them as a starting point for teachers who might be interested in applying the Foresee Approach in their classrooms. Actually, however, almost *anything* can serve as a potential resource — books, magazines, newspapers, encyclopedias, videos, etc.

So far we have explained that the theory generates the objectives ("what to teach") and the materials provide the substantive base ("what to use") for Foresee instruction. The third indispensable ingredient of application is **procedures**, that is, techniques of various types which

the teacher can utilize or adapt as systematic guides to lesson planning. Needless to say, the best Foresee procedures are those that lend themselves in a straightforward way to the accomplishment of a variety of objectives (including the teaching of learning strategies) and to the manipulation and use of selected materials.

The procedures component sits at the apex of the application triangle shown in Fig. 2 because it represents the actual *how* of Foresee instruction — "what to do." It contains guidelines to two related but distinct levels of lesson design: **lesson organization** and **techniques**. As regards the first level, Foresee lessons are usually organized to follow the five-stage instructional format suggested by C&O (1986). The five stages or phases of a typical CALLA lesson are:

a) **Preparation.** In this introductory phase, the teacher prepares the students for the lesson by helping them focus on the topic in some way (e.g., by asking them to recall prior knowledge through brainstorming).

b) **Presentation.** The teacher presents the new material in some way, taking care to ensure that comprehension occurs (e.g., by explaining it, or by having students read it).

c) **Practice.** The students participate in some activity, preferably group-oriented and communicative, which will provide them with an opportunity to "actively manipulate both the concepts presented and the language skills needed to understand and express the new information" (C&O, 1986, p. 22).

d) **Evaluation.** After (or sometimes during) the practice phase, some kind of informal evaluation of the students' understanding should occur. This can be accomplished in a variety of ways (e.g., by the teacher, as a cooperative peer activity, or through self-evaluation).

e) **Follow-up (Expansion).** This can be regarded as a consolidation phase; the students perform some activity that allows them further opportunity "to integrate the new concepts and skills acquired in the lesson into their existing knowledge framework" (Ibid.).

We have found that C&O's scheme constitutes an excellent format for including target objectives of all three types — content, language, and learning strategies — in any lesson. We supplement this scheme with specific procedural guidelines, called *Foresee lesson techniques*, for using and manipulating materials in ways that will lead to the accomplishment of these

objectives. These techniques constitute the second level of our procedures component. Ideally, they should be explicit, easy to understand, flexible, and adaptable to the teaching of a wide variety of content-area topics. Five of these techniques are described in the next section. As noted, these pertain specifically to *lesson* design. Before turning to them, let us briefly consider one other important aspects of the Foresee application process, namely *unit planning*.

Foresee unit development generally follows a *theme-based approach* (Gamberg et al., 1988; Brinton et al., 1989; Enright & McCloskey, 1988). We certainly make no claims to originality in this regard, and we recognize that most elementary teachers use theme-based instruction a good deal of the time. Nevertheless, the way in which we organize theme-based units to fulfil the aims of Foresee instruction, especially the teaching of language and learning strategies, is somewhat different from previous applications along these lines.

In planning a Foresee unit, the teacher should begin by choosing a theme or topic based on some attractive, motivating materials that are available. These materials are vital to the successful development of the unit, which is normally built around them. Good materials can serve as the foundation of a sequence of exciting lessons that often appear to develop from one to another in a natural, organic way. Foresee units also tend to be highly *integrated*, in several ways. First, of course, they emphasize the instruction of language and learning strategies as well as content. Second, they usually provide learning experiences in a variety of content areas. Many different subject areas can usually be incorporated into, and taught via, any unit. This is particularly true at the elementary level, and even more so in the ESL setting. For example, our Foresee unit entitled "Planets and Space" (Kidd & Marquardson, 1993) contains instruction in the areas of science, mathematics, social studies, and language arts. Though these subjects are taught through separate activities, all relate to the central theme in some way, and all provide a vehicle for teaching language and learning strategies as well.

A BRIEF REVIEW OF FIVE FORESEE LESSON TECHNIQUES

In this section we shall describe five general lesson techniques, all of which meet four important criteria mentioned above: they are explicit, easy to understand, flexible enough to permit modification when necessary, and easily adaptable to the teaching of a wide variety of content-area topics. These techniques, which probably represent the major innovation of the Foresee Approach, function as prefabricated guidelines to the design of effective lesson procedures. In our experience, the planning of the procedures section of lessons is usually the main stumbling block to the successful implementation of integrated ESL instruction. These special Foresee techniques make it relatively easy, however, to design lessons that accomplish the threefold objective of promoting students' learning of content, language, and learning strategies. All teachers need to do is plug in the content, so to speak; the various learning strategies and (to a lesser extent) language features are built into these techniques, and are thus automatically included in Foresee lessons without the need of special planning.

(1) The Text Questioning Technique (TQT).

This technique is particularly useful for introductory lessons on virtually any topic or theme. In order to illustrate its operation as clearly and thoroughly as possible, we shall describe it step-by-step. We also include information about some of the key learning strategies and language features practiced during each of the five lesson stages.

During the planning stage, the teacher chooses — from the students' textbook or some other suitable source — a reasonably short but informative reading passage on the target topic, making sure that this selection is accompanied by a title and as many of the following as possible: subheadings, pictures, diagrams, charts, or other visual supports. The teacher also prepares a comprehensive list of wh-questions on the content of the passage.

Our illustration of the TQT is taken from a unit on weather designed for grades 3-6. It makes specific reference to a reading passage on the water cycle in *Ernie and Bert's Red Book*, one stage of the *Open Sesame ESL Series* published by Oxford University Press. Any similar text could be used. This particular passage is accompanied by a title and a picture of the earth, the sky, and a river. Arrows in the picture indicate the three processes of evaporation, condensation, and precipitation. The actual text is as follows.

The Water Cycle

> Most of the earth is covered by water. The water is moving from one place to another all the time. This movement is called the water cycle. Here is how it works: The sun heats the water on the earth and the water rises into the air. The water becomes a gas called water vapor. This process is known as *evaporation.* When the water cools, it becomes a liquid again. This process is called *condensation.* Clouds form when there is a lot of water in the air. Water falls back to the earth when the clouds become too heavy. This process is called *precipitation.* Precipitation can be rain or snow. Now the water cycle is complete. It begins over and over again.
>
> Excerpted from *Ernie and Bert's Red Book, Open Sesame ESL Series, Stage F,* p. 51. Oxford University Press.

A. PREPARATION (Brainstorming).

The teacher begins this introductory phase by asking the students to open their books to the reading passage, look at the title and accompanying picture for one minute, and try to guess or predict what the passage is about. This brief activity gives students practice in the metacognitive strategy of ***Advance organization*** (previewing the main ideas of a reading passage by scanning for supporting information) and the cognitive strategies of ***Inferencing*** (predicting the contents or outcome of a text) and ***Imagery*** (using visual images to enhance understanding).

After one minute, the students are asked to close their books and to write down in a few words what they think the passage is about. Spelling, sentence structure, etc., are not important at this time. The teacher then listens to each student's prediction, writing on the chalkboard all the **key words** that are volunteered. In this case, the list of words usually includes *water cycle, ocean, sky, clouds, water, rain, evaporation, condensation,* and *precipitation.* If certain key words are missed, the teacher may ask the students to open

their books again and, through pointed questioning, elicit the unmentioned items. The following is a sample list of brainstorming questions for this passage, with anticipated student reponses in parentheses.

- What is this passage about? (the water cycle)
- How do you know? (the title)
- Can you name some of the things in the picture? (river, trees, hills, sun, clouds, rain, arrows)
- Do you think the water in the river is warm? (yes) Why? (the sun is shining)
- What happens to the water in the river? (it goes into the air)
- How do you know? (the arrow)
- What happens to the water in the air? What does it become? (clouds)
- What happens then? (it rains)
- Where does the rain fall? (to the earth)
- Does some of it fall into the river again? (yes)
- What happens to the water that falls into the river? (it goes into the air)
- Does the water keep going around as it did before? (yes)
- That's why this is called the **water cycle** — a cycle keeps going around and around. Do you know another word with "cycle" in it? (bicycle) What goes around and around on a bicycle? (the wheels)
- How many parts are there to the water cycle? (three)
- How do you know? (three words in the picture)
- What are the three words, or parts of the water cycle? (evaporation, condensation, precipitation)
- What does "evaporation" mean? (water rises into the air)
- How do you know? (the arrow)
- What does "condensation" mean? (clouds)
- How do you know? (the arrow, or, from the picture)
- What does "precipitation" mean? (rain)
- Good. We'll learn more about these words when we read the passage. Can you find these words in the passage, without reading it? (yes) Why are they easy to find? (different printing)

At the conclusion of this procedure, the students will have before them all the vocabulary necessary for understanding the reading passage; in effect, they will know what the whole passage is about before it is read. By recognizing the importance of key words at this stage, the students will be gaining familiarity with the metacognitive strategy of ***Selective attention*** (see Appendix A). They will also be gaining further practice in using ***Inferencing*** and ***Imagery***.

B. PRESENTATION (Listening).

The students close their books, and the teacher shows them a numbered list of wh-questions about the reading passage (on the overhead, or previously written on the

chalkboard but covered up until this point). The following list is one possible set of questions for this passage, with the answers (not given to the students, of course) in parentheses. Note that the questions could be modified to include slightly different vocabulary and correspond less directly to the text, depending on the language proficiency of the students. Note also that the order of questions should correspond to the order of information in the text, and that the answers demanded should be as short as possible.

1. What is most of the earth covered by? *water*
2. Where is water moving all the time? *from one place to another*
3. What is this movement called? *the water cycle*
4. A. What heats the water on earth? *the sun*
   B. Where does the water rise? *into the air*
5. A. What does the water become? *a gas*
   B. What is this gas called? *water vapor*
6. What is this process known as? *evaporation*
7. What happens when the water vapor cools? *becomes a liquid*
8. What is this process called? *condensation*
9. What happens when there is a lot of water in the air? *clouds form*
10. A. Where does the water fall? *back to the earth*
    B. When? *the clouds become too heavy*
11. What is this process called? *precipitation*
12. What are two forms of precipitation? *rain and snow*
13. A. What is now complete? *the water cycle*
    B. What does it do? *begins over and over again*

The students read all the questions silently, and then the teacher reads them aloud one by one, explaining any words the students do not understand and underlining key words the students will soon be listening for in a color (chalk or felt pen) different from the color in which the questions are written. For example, in question 1 the key word is *covered*, and in question 3 the key words would likely be *movement* and *called*. Then the students are instructed to write the question *numbers* (*not* the questions) down the left margin of their notebooks, in preparation for note-taking. After this is done, the teacher reads the entire passage aloud, fairly slowly, and the students listen carefully for information that will help them answer the questions on the board (or overhead). As they discover the answers, they write them down in short form (one or two words, or abbreviations or

numbers) beside the corresponding numbers on their papers. Since few students are usually able to answer all the questions on the first reading, the teacher generally reads the passage again once or twice, more rapidly, allowing students the opportunity to complete their lists or to check their answers. Four main strategies are practiced through this procedure. Once again, students employ ***Selective attention*** when they listen for key words that will help them answer the questions. For example, to answer question 1 above they must listen carefully for the word *covered.* They also practice ***Organizational planning*** when they write the list of question numbers in advance, as well as ***Self-monitoring*** when they check the accuracy of their answers on the second and third readings. Finally, and most obviously, they gain valuable experience in using the cognitive strategy of ***Note-taking*** (writing down key words and concepts in abbreviated form).

C. PRACTICE (Speaking and Writing).

The students first read the passage silently to themselves. Their comprehension is usually quite high, as they are now familiar with the vocabulary and main ideas. Then, with their books remaining open, they work in pairs, comparing their note-style answers and checking them against the printed text. At this point they should pay attention to the *form* of their short responses, ensuring that all abbreviations are expanded and that all words are spelled correctly. A set time limit (e.g., 10 minutes) should be alloted to this task. The teacher circulates around the classroom during this phase, providing assistance when requested. By focusing attention on the checking and correcting of their work, the students gain experience with the metacognitive strategy of ***Self-evaluation*** (judging the success of a learning activity after its completion). Also, by working in pairs and asking the teacher for help when necessary, the students are practicing the social-affective strategies of ***Cooperation*** and ***Questioning for clarification*** respectively (see Appendix A).

D. EVALUATION (Speaking).

The books are closed (or collected by the teacher, as they are no longer needed). The teacher proceeds to ask individual students for the short answers to the questions on the board (or transparency). As these responses are given, the teacher writes them beside the corresponding questions in the same color (chalk or felt pen) as the underlining used for key words. For example, if the questions are in blue the underlining and answers might both be in red. Examples:

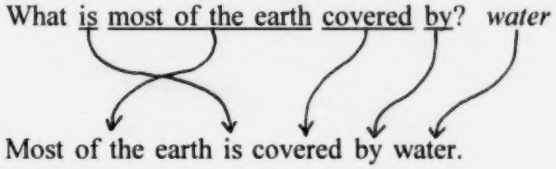
1. What is most of the earth covered by? *water*
2. Where is water moving all the time? *from one place to another*
3. What is this movement called? *the water cycle*

Since the students can correct their own work at this point, they gain further practice in ***Self-evaluation***.

E. FOLLOW-UP (Writing).

Books (if the students still have them) remain closed. The teacher demonstrates how to write proper full-sentence answers to a few of the wh-questions by using (a) most of the words in the questions and (b) the answers on the board (or transparency). Phrases can be underlined and arrows drawn to show how this is done, with the use of different colors adding greater effect. For example, question 1 would result in the declarative sentence that follows it.

1. What is most of the earth covered by? *water*



After a few more examples, the students are instructed to finish the activity individually by writing the rest of the answers in complete sentences. The main objective of this stage is to provide instruction and practice in a variety of formal aspects of language, mainly grammatical structure (transforming wh-questions to appropriate statements, preserving subject-verb agreement, sentence combining, etc.) but also vocabulary, spelling, punctuation, and capitalization. Many other structures can also be practiced at this stage, depending on the topic. An important discourse feature is also demonstrated via this exercise, namely the given-new pattern of information organization. For example, answers like *water* (question 1) typically appear at the end of their answer sentences because they represent new information in the discourse.

After the answers are completed, the students again work in pairs and help their partners by editing their work. When the members of each pair think their answers are correct, they present their papers to the teacher and, if time allows, read their answers aloud.

Once again, students get the chance to practice the strategies of ***Self-evaluation*** and ***Cooperation***. As they are wrestling with problems of linguistic form, they are also using

the cognitive strategies of ***Deduction/induction*** (applying language rules to the production of correct sentences, or making up rules based on language analysis) and ***Elaboration*** (expanding short answers into sentence form).

Finally, the teacher may initiate further follow-up activities, including individual research projects based on particular aspects of the reading passage.

We have described the TQT in considerable detail because it possesses all the qualities of a good Foresee technique. First, it is extremely adaptable in many respects. It can be employed in any subject area and for any topic, provided that a suitable reading passage can be found. Although we have described its application with reference to an ESL lesson designed for grades 3-6, it can be used effectively at other levels, with ESL-only groups or with mixed classes containing both ESL students and native speakers of English. Second, the technique is quite flexible, as it can readily be modified at a number of points. For example, in the presentation phase the students can answer the listed questions by reading the text rather than listening to it. Finally, the technique is explicit (i.e., each stage can be clearly described) as well as easy to understand and implement, despite its apparent complexity. It accommodates well to the five-stage lesson format recommended by C&O, providing the teacher with a straightforward, systematic scheme for developing language skills and learning strategies through content-area work.

Teachers wishing to experiment with the TQT may find it worthwhile to refer to the general outline of the technique presented in Appendix B. Note that the learning strategies in that outline are shown in bracketed italics, and are situated on the page according to the following convention: **metacognitive strategies** are listed on the *left*, **cognitive strategies** are in the *middle*, and **social-affective strategies** are on the *right*. Each strategy listed should be assumed to apply to the activity that has preceded it on the page.

(2) The Dictated Instructions Technique (DIT).

This Foresee technique is based on an idea found in Sample Science Lesson 1 in C&O (1986), which suggests an interesting method of informing students about the steps of a science experiment. We have simply generalized this procedure and entitled it the "Dictated Instructions Technique," or DIT. It can be used for almost any lesson in which the teacher gives instructions to students about some activity to be performed. Typically, such instructions are written on the chalkboard or overhead for students to copy, or photocopied instructions are distributed to everyone. Unfortunately, procedures of this type do very little to promote language development or encourage the practice of learning strategies. If the instructions are provided via the DIT, however, students are given a chance to exercise certain language skills and learning strategies that would receive no attention in conventional instruction. Among these are listening comprehension skills and the learning strategies of ***Selective attention***, ***Note-taking***, ***Cooperation***, and ***Questioning for clarification***.

The highlights of the procedure, when used in a science experiment lesson, are as follows. In the preparation stage, the teacher conducts a preliminary discussion of the experiment and attempts to relate the target phenomenon to the students' own experiences. This phase should also include a review of the parts of an experiment report (objective, apparatus, method, etc.), a formal statement of the experiment objective, and a visual examination and listing of the apparatus to be used.

In the presentation stage, the teacher gives each student a numbered list of the experiment instructions, with a number of key words (especially the imperative verbs) replaced by blanks. The teacher then dictates the instructions to the students, who fill in the blanks as an oral cloze activity. Abbreviations are used extensively at this point. Then, in the combined practice/evaluation phase, the students are divided into small groups where they compare the

notes they have taken, pool their information, and expand all abbreviations to produce complete and accurate instructions sheets. The teacher makes a point of circulating around the classroom, answering questions and providing assistance when required. Next, the teacher conducts a class discussion of the finished product, using student input to fill in the blanks on an overhead transparency of the instructions sheet. The students correct their sheets from this master copy (***Self-evaluation***), and then go ahead and perform the experiment in their small groups.

In the follow-up stage, which is mainly a writing activity, the students complete their experiment reports. They write the method in the passive voice, a task for which they are carefully prepared in the following way. Referring to the instructions sheet on the overhead, the teacher uses the first few steps to demonstrate how to convert imperative sentences to passive sentences by moving direct objects to subject position and changing the verbs to passive form (see the examples below). The students then finish their method sections themselves, discuss and write the observations and conclusion, and attach their diagram to their final report.

A detailed general outline of the DIT, including the learning strategies practiced in each stage, is given in Appendix C. We illustrate this technique through reference to an experiment on the construction and use of a hygrometer, a meteorological instrument used for measuring relative humidity. The materials and instructions sections are as follows.

CONSTRUCTING AND USING A HYGROMETER

Materials (Apparatus):

One oatmeal carton, two large rubber bands, two indoor/outdoor thermometers, scissors, a piece of wide white cotton shoestring about 15 cm long, a pill bottle or baby food jar, ruler, water.

Instructions (Method):

1. Cut a slot in one side of the oatmeal carton about 5 centimetres from the bottom.
2. Put the rubber bands around the carton.
3. Slide the thermometers under the rubber bands.
4. Move one thermometer above the slot.
5. Slip one end of the shoestring through the slot.
6. Fit the other end of the shoestring over the bulb of one thermometer.
7. Fill the baby food jar or pill bottle half full of water.
8. Put it inside the carton.
9. Place the end of the shoestring in the water.
10. Add more water as needed to keep the string wet.
11. Read the temperatures of the dry bulb and wet bulb thermometers.
12. To calculate the relative humidity, subtract the wet bulb reading from the dry bulb reading. Then determine the relative humidity from this chart.
13. For three days, record the outside relative humidity in the morning and afternoon.
14. Make a bar graph to show the results.

Adapted from *Weather, Electricity, Environmental Investigations*. (1982). The Learning Works, Inc.

The imperative verbs as well as most nouns are omitted from this list of instructions to produce the method instructions handout below. Note that other grammatical categories, such as prepositions or articles, could have been omitted instead of nouns. The choice is entirely up to the teacher.

CONSTRUCTING AND USING A HYGROMETER

1. _____ a _____ in one _____ of the _____ about 5 centimetres from the _____.
2. _____ the _____ around the _____.
3. _____ the _____ under the _____.
4. _____ one _____ above the _____.
5. _____ one _____ of the _____ through the _____.
6. _____ the other _____ of the _____ over the _____ of one _____.
7. _____ the baby food _____ or pill _____ half full of _____.
8. _____ it inside the _____.
9. _____ the _____ of the _____ in the _____.
10. _____ more _____ as needed to keep the _____ wet.

11. _____ the _____ of the dry _____ and wet _____ _____.

12. To calculate the _____, _____ the wet bulb _____ from the dry bulb _____. Then _____ the relative humidity from this _____.

13. For three _____, _____ the outside relative humidity in the _____ and _____.

14. _____ a _____ to show the _____.

Note: Items 11-14 may be omitted here and used in a subsequent "observation lesson."

The two instructions lists above should suffice, without further comment, to illustrate the presentation and practice/evaluation stages of the DIT. To clarify the demonstration part of the follow-up phase, consider how instructions 1, 2, and 4 can be transformed into passive sentences for the method section of the experiment report.

1. ✓ wasCut (a slot) in one side of the oatmeal carton about 5 centimetres from the bottom.

Result: A slot was cut in one side of the oatmeal carton about 5 centimetres from the bottom.

2. ✓ were Put (the rubber bands) around the carton.

Result: The rubber bands were put around the carton.

4. ✓ was Move → moved (one thermometer) above the slot.

Result: One thermometer was moved above the slot.

The depth of the teacher's formal analysis depends on the age and proficiency of the students. Some of the grammatical points that could be discussed are as follows.

a) Direct object position and subject position.

b) Past participle forms of verbs, both regular (e.g., in 4) and irregular (e.g., in 1 and 2). (Note: to empower the students to complete the method section themselves, the teacher should finish the demonstration by supplying the past participle forms of all irregular verbs in the instructions list.)

c) Use of the past tense forms of the verb *to be*, required because the experiment has been completed.

d) Subject-verb agreement: *was* for singular subjects (e.g., in 1 and 4), *were* (e.g., in 2).

e) Capitalization of the first letter of each new sentence.

f) In general, the reason for using the passive voice: to make the report impersonal by avoiding the subject "I."

(3) The Research Technique.

This technique requires students to engage in individual research on particular aspects of the main topic. We shall illustrate its application in our unit entitled "Animals and their Habitats" (Kidd & Marquardson, 1993), which was designed for students in grades 3-6 functioning at an intermediate level of English proficiency. In the "forest" section of this unit, each student chooses a different forest animal to investigate. The teacher takes the students to the library, where they sign out books containing information about their animals. Back in the classroom, the teacher presents them with an outline to use when compiling their data, modeling the process of completing the outline by filling it in for an animal not chosen by any of the students. The forest animals outline, adapted from questions in *Prairie Dawn's Purple Book* (Stage D of the *Open Sesame ESL Series*) is as follows.

The _____

If I could be any animal in the forest, I would be a _____ because (why you chose it) _____

I am (description - what you look like) _____

_____

I live (where you live) _____

_____

I eat (which foods you eat → carnivore, herbivore, or omnivore) _____

_____

My enemies are _____

_____

Other interesting things about me are _____

_____

The students then proceed with their own research, reading their books and recording the categorized information as the teacher has modeled. Meanwhile, the teacher circulates around the room and gives students the cues or assistance they need to move ahead. After the students have completed the first drafts of their outlines, they edit them with their partners before presenting them to the teacher. Then each student reads his or her outline to the teacher, who helps edit it for the final draft.

Through this activity, the students gain experience in using the metacognitive strategies of ***Organizational planning*** (planning the parts and sequence of information to be expressed orally or in writing) and ***Selective attention*** (looking for key words in the text to help them fill in the outline). They also practice the cognitive strategies of ***Resourcing*** (using reference materials to gather information), ***Imagery*** (using pictures in their reference books to help them understand and remember), ***Note-taking*** (from a written text), and ***Summarizing***.

(4) The Presentations Technique.

The activity generated by this technique, class presentations, follows directly from the research that has just been completed. As a result of their individual investigations, the students have each acquired extensive knowledge about some aspect of the main topic. In the unit discussed above, for example, everyone has become an expert about his or her own forest animal. All students now have the task of presenting their research findings to the whole class.

As a preliminary step, the teacher informs the students of the order of presentations and encourages them to practice reading their research projects aloud at home. The students are then given a "summary outline form" that follows the same order as the outline for their research project. The following outline can be used for forest animals as well as for the animals in the other habitats discussed in the unit — desert, ocean, and jungle.

The _____

Description _____

_____

Habitat _____

_____

Food _____

_____

Enemies _____

_____

Other _____

_____

In the presentation phase (an especially appropriate term in this case!), a designated student stands at the front of the room, shows a picture of his or her own animal, and reads his or her research findings slowly to the class. As the presenter reads, the students listen and take notes. Usually two additional readings are necessary, the second to help students complete their summaries and the third to give them a chance to check their answers. Note that this procedure motivates the presenter to read *clearly* and *carefully* to the class instead of rushing through the presentation just to get it over with. Successful performance of this task can help boost the self-confidence of presenters, who suddenly discover that they possess adequate speaking skills for communicating complex information in English. The rest of the students benefit also, as they are given the opportunity to learn about other animals, practice their listening skills, and make good use of the metacognitive strategy of ***Selective attention***. Above all, they must pay active attention to each speaker, and cannot just "tune out" until it is their turn to present.

After each presentation, the note-taking students are divided into pairs or small groups. Within a definite time (e.g., 5 minutes) they compare their answers and revise them where

necessary. After this task has been completed, the presenter assumes a teaching role and corrects the information with the class by following the outline on the board (or transparency). To begin, the presenter fills in the title. Then he or she asks the class for information about the first category. In our example, the question might be "What does this animal look like?" The other students volunteer the information they have compiled, and the presenter writes it on the board (or transparency) correctly. The other students check the presenter's written details against their own, correcting spelling and punctuation where necessary. (Note that each presentation consumes a great deal of time, and normally only one or two can be given in an average class period; consequently, this entire activity may take a week or longer to complete.)

This technique lends itself well to direct instruction of learning strategies and the practice of a wide range of strategies including ***Selective attention***, ***Self-monitoring***, ***Organizational planning***, ***Self-evaluation***, ***Note-taking***, ***Summarizing***, and ***Cooperation***, all mentioned above. Additional cognitive strategies practiced are ***Grouping*** (classifying concepts into different categories), ***Elaboration*** (building upon one's previous knowledge of a topic), ***Auditory representation*** (playing back spoken words in one's mind during note-taking), and ***Transfer*** (making use of previously acquired knowledge or skill to assist in coping with a new learning task).

(5) The T-List Procedure.

This technique is derived from C&O's (1986) Sample Social Studies Lesson 2. Like the TQT and DIT, the T-list Procedure aims to improve students' listening comprehension skills and provide practice in using the learning strategy of ***Selective attention***. The teacher explains to the students that they are going to hear a short passage on a particular topic. The passage, they are told, will contain a number of discourse markers that will give clues as to the sequence of ideas, whether pieces of information are main ideas or supporting details, etc.

When the passage is dictated (or a tape is played), the students make notes on a "T-list." This is simply a page with a vertical line down the middle, sometimes with certain information already on it. On the left side, the students note the main ideas of the text. On the right, they write details and examples (i.e., supporting information) beside the corresponding main ideas. Through this exercise, the students gain skill at identifying main and subordinate ideas by attending to discourse cues of various sorts. The first few times the procedure is used, the T-lists provided to students may contain a good deal of information already on them, so students need only fill in the missing information. As they develop more skill at note-taking, they can eventually fill in their T-lists without such assistance. Follow-up activities can include the writing of paragraphs or essays based on the abbreviated information in the T-lists.

The T-list Procedure is a very adaptable technique that can be applied using many texts in different subject areas. It is also flexible, allowing many possibilities for variation and for follow-up activities that suit the needs of different topics and texts.

The five techniques above were selected from a Foresee repertoire that is still far from being fully stocked. We are continually working to expand the array of general lesson procedures suitable to the kind of integrated ESL instruction we recommend, and we welcome any suggestions from ESL or mainstream teachers who might devise original techniques for this purpose. We are convinced that while theory may be the province of others, the development of effective techniques is a task best performed by classroom teachers themselves, since they have the ideal opportunity to experiment from day to day with new ways of utilizing attractive and motivating materials to teach content, language, and learning strategies to the ESL students in their charge.

CONCLUSION

The recent trend towards integrating language and content in ESL teaching has been a very beneficial one, but we are convinced that the value of an integrated approach rises dramatically when learning strategies are included as a third target of instruction. We agree with Norman (1980) that there is a need to shift some of the emphasis from the "what" of learning (i.e., the subject area content) to the "how":

> It is strange that we expect students to learn yet seldom teach them about learning . . . It is time we made up for this lack, time that we developed the applied disciplines of learning and problem solving and memory. We need to develop the general principles of how to learn, how to remember, how to solve problems, and then to develop applied courses, and then to establish the place of these methods in an academic curriculum. (p. 97)

While CALLA was obviously never intended to satisfy the whole of Norman's ambitious curricular prescription, there is no question that C&O's groundbreaking work on the teaching of learning strategies has been a major contribution to the special field of ESL education. Thanks to their model, a systematic means of teaching the "how" of learning both content and language has come within the reach of all teachers of ESL students.

Unfortunately, however, the type of integrated instruction pioneered by C&O has not become widely practiced to date. Few mainstream teachers are aware of CALLA, and even though the majority of ESL teachers are probably familiar with it to some degree, relatively few as yet — at least in our province — have tried to implement it in their classrooms. Our purpose in developing the Foresee model has been to "grease the wheels" of reform, so to speak, by articulating a relatively straightforward scheme for establishing desirable objectives and planning effective integrated lessons. We hope that the brief description of our model in this paper will be of interest to other teachers, ESL or mainstream, who may be encouraged to experiment with an integrated style of instruction that we have found so effective.

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Appendix A: List of Learning Strategies

NOTE: Column 2 cites Chamot & O'Malley's (1987) descriptions of the learning strategies, word for word; column 3 contains explanations, comments, or notes relating to the frequent application of the strategies in instruction using the Foresee Approach.

METACOGNITIVE STRATEGIES:

Strategies relating to the planning, monitoring, or evaluating of one's own learning.

Advance organization	Previewing the main ideas and concepts of the material to be learned, often by skimming for the organizing principle	A receptive strategy — looking at headings, subheadings, accompanying pictures or diagrams, etc., to get ideas about (and predict) the contents of a reading passage.
Organizational planning	Planning the parts, sequence, main ideas, or language functions to be expressed orally or in writing	A productive strategy — used when planning note-taking activities, procedures for answering questions, etc.
Selective attention	Deciding in advance to attend to specific aspects of input, often by scanning for key words, concepts, and/or linguistic markers	Receptive — listening (or reading) for key words and discourse markers that will assist in comprehending the material, taking notes, etc. May also assist in production (question-answering) when students identify and underline the most important words in written questions.
Self-monitoring	Checking one's comprehension during listening or reading, or checking the accuracy and/or appropriateness of one's oral or written production while it is taking place	Receptive or productive — checking one's own understanding of the material while learning is going on, or checking the accuracy of one's work as it is being done.
Self-evaluation	Judging how well one has accomplished a learning activity after it has been completed	Receptive or productive — similar to *Self-monitoring*, but performed after the completion of the task. Often a collaborative endeavor enlisting the support of peers or the teacher.

COGNITIVE STRATEGIES:

Strategies which can be applied directly to the tasks of understanding and learning.

Resourcing	Using target-language reference materials such as dictionaries, encyclopedias, or textbooks	Often accomplished by making use of resources such as library materials, newspapers, fliers, magazines, etc.
Grouping	Classifying words, terminology, or concepts according to their attributes	Increasing one's understanding of content material by grouping together sets of things having similar characteristics. When the groups are *named* as well, this process is better called *Classifying*.
Note-taking	Writing down key words and concepts in abbreviated verbal, graphic, or numerical form during a listening or reading activity	Often goes hand in hand with *Organizational planning* and *Selective attention* — e.g., writing a column of numbers and then listening for the answers to a predetermined series of questions.

Summarizing	Making a mental or written summary of information gained through listening or reading	Sometimes accompanies *Grouping*, since a summary may consist of information in a series of separate categories. Also, often follows *Note-taking* as an end result.
Deduction/ induction	Applying rules to understand or produce the second language, or making up rules based on language analysis	Actually two strategies in one. Used when wrestling with any problem of linguistic form (grammar, spelling, punctuation, etc.), either by applying rules already learned (*Deduction*) or by formulating one's own rules on the basis of available linguistic evidence (*Induction*).
Imagery	Using visual images (either mental or physical) to understand and remember new information	Using pictures to increase understanding, or making diagrams (e.g., Venn diagrams), charts, or other graphic representations to make information easier to understand and remember. Often accompanies *Grouping*.
Auditory representation	Playing back in one's mind the sound of a word, phrase, or longer language sequence	May be teacher-initiated. Used particularly in *Note-taking*.
Elaboration	Relating new information to prior knowledge, relating different parts of new information to each other, or making meaningful personal associations to the new information	Basically, building upon one's previous knowledge of a subject. Often, learning more about a particular topic by *Resourcing* (doing research on particular subtopics). Also, may involve expanding one's linguistic expression of a topic or idea (words → sentences → paragraphs).
Transfer	Using previous linguistic knowledge or prior skills to assist comprehension or production	Making use of previously acquired linguistic knowledge or skill to assist in coping with a new and different learning task.
Inferencing	Using information in an oral or written text to guess meanings, predict outcomes, or complete missing parts	In the Foresee Approach, *Predicting* means guessing what will come next in a story or other reading passage. *Inferencing* means guessing at answers — to questions, when grouping or taking notes, etc.

SOCIAL-AFFECTIVE STRATEGIES:

Strategies through which the learner somehow enlists the support or assistance of other people (e.g., peers, teachers) or establishes an emotional or attitudinal state of mind conducive to success.

Questioning for clarification	Eliciting from a teacher or peer additional information, rephrasing, examples, or verification	Basically, the strategy of actively seeking help from others (peers or teacher).
Cooperation	Working together with peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback from an oral presentation	Many applications. Often used with *Self-evaluation*. Usually teacher-initiated (pairs, small groups).
Self-talk	Reducing anxiety by using mental techniques that make one feel competent to do the learning task	Sometimes involves the mental (or even spoken) "rehearsal" of the steps that need to be performed to accomplish a particular task.

Appendix B: General Outline of The Text Questioning Technique (TQT)

A. PREPARATION (Brainstorming) - Speaking

1. (Students are given a reading passage accompanied by some of the following: title, subheadings, pictures, diagrams, captions, etc. It is assumed here that the selection is in a book.) Tell students to **OPEN** books and predict what the passage is about, without reading it. (one minute).

[Advance organization] *[Predicting/inferencing]*
[Imagery]

2. Tell students to **CLOSE** books and write down predictions. Spelling and sentence structure are not important at this time.

3. Listen to predictions (brainstorm); write the key words (vocabulary) on the board or overhead.

4. Tell students to **OPEN** books, and conduct a discussion of the title, pictures, diagrams, etc. If necessary, ask pointed questions to elicit important vocabulary items that have not yet been mentioned. Try to get students to predict the contents of the passage as completely as possible. Students do not read the passage at this point!

[Predicting/inferencing]
[Imagery]

B. **PRESENTATION** - Listening

5. Tell students to **CLOSE** books.

   a) Students silently read a numbered list of questions which the teacher shows them (on the board, previously concealed, or on the overhead projector).

   b) After silent reading, read the questions aloud to the students one by one, reviewing any vocabulary they do not understand. Underline key words that the students will be listening for in step 7, using chalk (or a felt pen) of a color different from the one the questions are written in.

[Selective attention]

6. Instruct students to number their papers (left-hand side) 1-n ("n" being the number of questions on the list), in preparation for note-taking. They should also label A, B, C, ... parts to questions, where they occur.

[Organizational planning]

7. Read the passage aloud fairly slowly. The students listen carefully for the answers to the questions on the board, writing these answers down in short form (1 or 2 words, abbreviations, or numbers) beside the appropriate numbers on their papers.

[Self-monitoring] *[Note-taking]*
[Auditory representation]

8. Read the passage aloud a second (and, if necessary, third) time, to ensure that the students have answered most of the questions and to give them a chance to check their answers. Increase the speed of delivery each time.

[Self-monitoring]

C. PRACTICE - Reading and speaking.

9. Tell students to **OPEN** books and read the passage silently (their comprehension should be high, as they now understand the topic and know key vocabulary). Then, in pairs or small groups, they compare answers and check them against the open text to verify and produce:
   a) correct answers
   b) correct spelling.

   Students should ensure that their answers are spelled correctly, and that all abbreviations are expanded (10 minutes). Circulate and help the students when they request assistance.

[Self-evaluation] *[Elaboration]* *[Cooperation]* *[Questioning for clarification]*

D. EVALUATION - Speaking.

10. Tell students to **CLOSE** their books (or collect them, as they are no longer needed), and ask individual students to contribute their answers to questions on the list. Write their correct replies (1 or 2 words) beside the questions, using the same color of chalk (or felt pen, if using the overhead) as was used for the underlining of key words in step 5(b). The students should correct their errors at this point.

[Self-evaluation]

E. FOLLOW-UP - Writing.

11. Books (if the students still have them) remain **CLOSED**. Demonstrate how to write proper declarative sentences (answers to the questions) by using (a) most of the words in the questions, and (b) the answers on the board. The key words in the questions are already underlined in the same color as the answers (see steps 5(b) and 10). Now underline, in the same color, additional words and phrases which the students can use in their answers. Draw arrows to show how the declarative sentence answers can be derived from the questions. Then, working individually, the students write the answers in complete sentences.

[Deduction/induction]
[Elaboration]

12. Working with their partners, the students edit their work.

[Self-evaluation] *[Deduction/induction]* *[Cooperation]*

13. When students think their answers are correct, they present their final drafts to the teacher and read their answers aloud.

Appendix C: General Outline of The Dictated Instructions Technique (DIT) (as used for a science experiment lesson)

A. PREPARATION - Listening, speaking, and writing

1. Prepare the students for the experiment by reviewing the science topic or question it aims to investigate. Ask questions which will activate their current knowledge schemata and lead to the formulation of an experiment objective (what the students will try to find out about the topic or question under discussion). Using the students' ideas and contributions as far as possible, write (on the chalkboard) key words and phrases that can subsequently be used to construct a formal statement of the experiment objective (e.g., *determine, discover, measure, construct*).

2. Discuss the 6 parts in a science experiment report. Write key vocabulary items on the chalkboard and explain what they mean: *Objective, Apparatus, Method, Observations, Conclusions, Diagram*. Review this information quickly if students are familiar with it. Tell them that these will be the parts of their report, beginning with the objective.

3. Returning to the experiment objective, use the key words on the board (step 1) to write a formal statement of the objective, using student suggestions about grammatical structure as far as possible. (Since the objective will likely begin with an infinitive, explain to the students that this is not a full sentence; it is a conventional way of stating an objective.) Tell the students to begin the experiment report on a blank page of their notebooks. Entertain suggestions about a title, and choose the appropriate one; have them copy it at the top of their page. Then instruct them to write the subheading *Objective:* followed by the formal statement on the board.

4. Show, discuss, identify, and write down the names of the equipment they will use in performing the experiment. Instruct them to write the subheading *Apparatus:* and list the equipment to be used. Advise them to listen carefully for these key words in the dictation activity to follow. The students are now prepared for the experiment: they know the objective and apparatus, and have begun their formal experiment report.

[Organizational planning]
[Selective attention]
[Predicting/inferencing]
[Elaboration]
[Imagery]
[Deduction/induction]

B. PRESENTATION - Listening and writing

5. Distribute a worksheet containing the steps of the experiment (method) numbered 1, 2, 3, etc., but with many of the words replaced by blank spaces. The students will fill in the blanks during the dictation in step 6. The number of blanks to leave in each step, as well as the types of words to be omitted, will depend on the proficiency of the students. Initially, you may wish to omit only the sentence-initial imperative verb of each instruction plus certain key nouns (especially the apparatus terms they have learned). In another experiment, omit verbs and prepositions. For more advanced students, omit verbs and entire phrases (e.g., noun phrases consisting of nouns preceded by articles or other determiners, or entire prepositional phrases).

6. Dictate the method instructions to the students, using the imperative form of verbs and making use of discourse cues like *first, second, . . ., next,* and *finally*. The students fill in the blanks in their instruction sheets, using abbreviations if necessary. Dictate the passage a second time, to allow them a chance to fill in gaps and check their work.

[Organizational planning] *[Note-taking]*
[Selective attention] *[Auditory representation]*
[Self-monitoring]

C/D. PRACTICE/EVALUATION - Reading and speaking

7. Group the students in pairs or small groups. Instruct them to compare their notes and pool information, expanding abbreviations to produce complete and accurate instruction sheets. Assign a time limit (e.g., 10 min.). Circulate to provide assistance.

[Self-evaluation] *[Deduction/induction]* *[Cooperation]*
[Questioning for clarification]

8. Ask individual students to dictate steps of the method from their completed sheets, and write these on an overhead transparency of their worksheet, filling in the same blanks as the students did. Discuss spelling and grammatical structures where pertinent.

[Self-evaluation] *[Deduction/induction]*

9. Instruct the students (in their pairs or small groups) to go ahead and perform the experiment, following the instructions on their sheets. If appropriate to the experiment, have them record observations on a separate sheet (preferably one prepared for them, containing a scheme for recording information, e.g., a chart).

10. When the experiment is completed and observations recorded, have students draw a labeled diagram of the experiment setup.

[Selective attention] *[Transfer]* *[Cooperation]*
[Self-monitoring] *[Note-taking]* *[Self-talk]*
[Imagery]

E. FOLLOW-UP - Writing

11. Using the previously completed transparency of the method, demonstrate how each step can be changed from the imperative form to the passive voice. Tell the students they must use the passive because they want their report to be impersonal, avoiding "I" or "we." During the demonstration, focus on structural points like (a) using the object of the imperative verb as the subject of the new sentence; (b) how the passive is formed, using (c) a form of the verb *to be* (*was* or *were* - discuss subject-verb agreement) and (d) the past participle (discuss regular past participles and supply correct forms for all irregular verbs in the list). Use arrows to show how the sentences are transformed. Model the first few on the transparency, producing the first few numbered sentences of the *Method* which the students can now begin entering on their experiment reports (after *Apparatus*). Then let the students complete the formal write-up of the method, all in the passive. They can check each others' work when completed.

12. The *Observations* and *Conclusion* can subsequently be discussed and entered, completing their reports. As a final step, students can cut out their reports, diagrams, and observation charts and glue them onto colored construction paper to produce an attractive end-product.

[Self-evaluation] *[Deduction/induction]* *[Cooperation]*
[Elaboration]

Note: This procedure can be modified in many ways, to suit the experiment.